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There is Preliminary Evidence on the Effect of Treatment Mall on Individuals with Chronic Mental Illness

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CLINICAL SCENARIO:
The treatment mall is a locked-in community dwelling within a hospital that allows patients to have time off their ward where they then receive several hours of rehabilitative groups, activities, and treatment. The mall is set up differently at each hospital; however, these principles remain the same. Occupational therapists across the country play an intricate role in providing rehabilitative services to patients in the treatment mall. They facilitate groups that assist individuals with chronic mental illness with finding appropriate, clean and sober activities that provide the patients a 'toolbox' for them to utilize when discharged from the institutionalized environment. Treatment mall is appropriate for mentally ill patients of all demographics who are either civilly or forensically committed to a hospital (commonly a state mental hospital). To date, few studies have provided a strong level of evidence to support the effect and implementation of treatment mall on individuals with chronic mental illness.

FOCUSED CLINICAL QUESTION:
What is the impact of the Treatment Mall model on individuals with chronic mental illness?

SUMMARY of Search, 'Best' Evidence' appraised, and Key Findings:

Five citations were located that met the inclusion/exclusion criteria. All articles found were expert opinion articles;

- Bopp et al (1996) (level 1) discusses the implementation of the treatment mall at a hospital in New York. It is frequently referenced in other treatment mall articles and it appears to be the first hospital to have implemented the treatment mall
- Dvoskin et al (2002) (level 1) was a detailed article depicting the elements of architectural design that were utilized when trying to plan and implement a treatment mall at a Colorado state hospital. It is the best description of a hospital's design and plan for implementation that is among the current available data.
- Ballard (2008) (level 1), and Holland et al (2005) (level 1) are both expert opinion papers that highlight some of the benefits the hospitals found after implementation of the treatment mall. No details regarding sample size, selection process or analysis are provided.
- The best evidence was the expert opinion, comparison article by Webster S.L., Sheitman B.B., Barboriak P.N., Harmon S.H., Paesler B.T., Gordon P.A., et al (2009). Results were as follows:

- The integrated treatment mall program proved no less safe than when patients were previously segregated, and the quality of treatment and level of group participation, especially with the forensic patients, was encouraging to

the authors. They state, “The forensic patients were significantly more likely to engage [in group] without prompting and to remain consistently on task, and they were significantly less likely to refuse to join or to leave a group” (p. 263-264).

- Clinically significant improvements were reported in the forensic population in the areas of engaging in group without prompting, remaining consistently on task, and significantly less likely to refuse to join or to leave a group. These improvements were both sustained and increased during the next three-month period.
- A t-test was run to determine the mean age of the groups; the forensic population was found to be younger than the civil population.
- The study had some methodological limitations including several uncontrollable variables and a limited set of sample outcomes.

CLINICAL BOTTOM LINE: Evidence suggests that the implementation of a treatment mall for individuals may have a positive effect with individuals with chronic mental illness, but data is not conclusive at this time.

Limitation of this CAT: This critically appraised topic is not a complete and exhaustive review of literature. The author has some training, but is still a relative novice practitioner. This critically appraised topic has been peer-reviewed by one lecturer.

SEARCH STRATEGY:
Using the levels of evidence defined by the Oxford Centre for Evidence-based Medicine (Phillips et al., 1998) the search strategy aimed to locate the best available evidence. The evidence found for this topic consisted primary of level 5 evidence: Expert Opinion.

Terms used to guide Search Strategy:

- **P**atient/Client Group: individuals with chronic mental illness
- **I**ntervention (or Assessment): treatment mall approach/implementation
- **C**omparison: Nil
- **O**utcome(s): Overall impact of intervention (whether positive or negative).

Databases and sites searched	Search Terms	Limits used
General Databases EBSCO (CINAHL) **Systematic Review Sites** Cochrane, Psych INFO, PubMed (OVID) **Specific Websites** Reference lists from journal articles Web of Science Google Search	Search « Dorothea Hix Hospital Search « Treatment Mall » Combine with AND Search <<Treatment Mall>> Search <<State Hospital >> Combine with AND Search <<Title from first search >> Search << Colorado State Hospital AND Treatment Mall >> Search <<Treatment Mall>>	Exact Phrase 'Treatment Mall' Full text or links to full text English

INCLUSION and EXCLUSION CRITERIA

- Inclusion: Studies that involved treatment mall as an intervention
  - Studies that involved the implementation of treatment mall in a mental health/state hospital (Civilly and/or forensically committed)
  - Full text published/ Available in English
  - Adults with chronic mental illness
  - Not specifically peer-reviewed
- Exclusion: Studies that did not involve treatment mall
  - Studies that did not involve individuals with chronic mental illness

RESULTS OF SEARCH

Five relevant studies were located and categorised as shown in Table 1 (based on Levels of Evidence, Centre for Evidence Based Medicine, 1998). Initially the articles were selected by title and topic, but after the increased difficulty in finding appropriate data other strategies were used. Several of the articles discussed above were found through the references page of other available articles. Two articles (Webster et al, 2009; Dvoskin et al, 2002) were provided through an occupational therapist at a local state hospital that currently implements the treatment mall as well as a professor at a local university. Review of literature was deemed exhausted for the purpose of this CAT when redundancy of articles cited in the references list of each article was found.

Table 1: Summary of Study Designs of Articles retrieved

Study Design/ Methodology of Articles Retrieved	Level	Number Located	Author (Year)
Expert Opinion including literature review and consensus statements	5	5	1. (Webster S.L., Sheitman B.B., Barboriak P.N., Harmon S.H., Paesler B.T., Gordon P.A., et al., 2009) 2. (Ballard, F.A., 2008). 3. (Bopp, J.H., Ribble, D.J., Cassidy, J.J. & Markoff, R.A., 1996). 4. (Dvoskin, J. A., Radomski, S. J., Bennett, C., Olin, J. A., Hawkins, R. L., Dotson, L. A., et al., 2002). 5. (Holland, J., Vidoni-Clark, C., Prandoni, J. R., Fain, M. R., Richardson, E. J., & Montalbano, P., 2005).

BEST EVIDENCE

The following study/paper was identified as the 'best' evidence and selected for critical appraisal. Reasons for selecting this study were:

- The research paper addressed the clinical question- compared the forensic mental health patients with the civilly committed patients, primary outcome measure was integrated treatment and rehab group sessions, overall disruptiveness and dangerousness within the program.
- Best expert opinion paper found
- Recent research (2009)

SUMMARY OF BEST EVIDENCE

Table 2: Description and appraisal of expert opinion study by Webster S.L., Sheitman B.B., Barboriak P.N., Harmon S.H., Paesler B.T., Gordon P.A., et al., (2009).

Aim/Objective of the Study/Systematic Review: The study explored the sample data collected at Dorothea Dix Hospital after their implementation of the treatment mall into their hospital. Their hope was to compare the forensic mental health patients with the civilly committed patients in the mall in the areas of integrated treatment and rehabilitation group sessions as well as in overall disruptiveness and dangerousness within the program.

Study Design: This study appears to be a qualitative, expert opinion, comparison study. N = 94 forensic patients, 100 civil patients. Allocation was not random or concealed. Outcomes were measured after two, three-month period periods.

Setting: Dorothea Dix Hospital, Raleigh, North Carolina, in the treatment mall, United States of America.

Participants: N = 194. No recruitment procedure was conducted. Eligibility criteria included individuals from the forensic and civil populations at Dorothea Dix Hospital who participated in the treatment mall during two three-month periods: January 1 through March 31 during both 2005 and 2006. This study used a non-randomized, convenience sample. No other criteria was made.

Key Demographics: 94 participants from the forensic program from maximum- and medium-security residential units, 100 civilly committed participants from long-term residential units for males and females. Of the forensic patients, 85 males, 9 females (mean age = 39 +/- 13 years; 26 to 52 years old). 29 individuals were Caucasian, 58 were African American, 7 from other racial groups. Regarding primary diagnoses 44 patients had schizophrenia, 16 patients had schizoaffective disorder, 12 patients had other psychotic disorders, and 22 had other diagnoses. Of the civil patients, 55 males, 45 females (mean age = 44 +/- 11 years; 33 to 55 years old). 53 individuals were Caucasian, 39 were African American, 8 from other racial groups. Regarding primary diagnoses 34 patients had schizophrenia, 29 patients had schizoaffective disorder, 14 patients had other psychotic disorders, and 23 had other diagnoses. No dropouts were reported.

Intervention Investigated
Methods: After a transition to the treatment mall, data was collected via facilitator report after each group session. Group facilitation was provided by practitioners from various disciplines, such as rehabilitation services, nursing, psychology, and social work. The facilitators were to electronically score each participant's level of engagement in the group. In addition, data was tracked regarding any use of restrictive intervention (seclusion, restraint, or physical holds) and the occurrence of assaults during mall hours. It is unclear in the study if this additional data was found in the patients' charts or was a part of the electronic survey documentation as well. This rating system was analyzed during two three-month periods: January 1 through March 31 during both 2005 and 2006. The program operates 105 treatment and rehabilitation groups per weekday. Each group lasts 45 minutes. It is unclear how many hours of treatment were provided to patients discussed.

Outcome Measures: The author did not indicate which of the seven outcome measures were considered the primary outcome measure. Observations were recorded by the electronic survey given to the facilitators of groups and utilized a *nominal scale of 1-7.* The seven possible ratings were: 1, refuses to join or leaves the group; 2, remains in the group but is disruptive; 3, remains in the group but does not participate; 4, engages in the group only when prompted; 5, needs frequent redirection to task or discussion; 6, engages with prompting, then remains on task; and 7, engages without prompting and is consistently on task. Following each three-month period, a chi square analysis was run to analyze the compilation of data (See Table 1). The study did not report who took this measure and analyzed it.

Main Findings: The integrated treatment mall program proved itself to be no less safe than when the patients were previously segregated, and the quality of treatment and level of group participation, especially on the part of forensic patients, was encouraging to the authors. Furthermore, “the forensic patients were significantly more likely to engage [in group] without prompting and to remain consistently on task, and they were significantly less likely to refuse to join or to leave a group” (p. 263-264).

Regarding the tracked variables of assaultive behavior and restrictive interventions, the findings were as follows: “In 2005 the forensic patients required no restrictive interventions, and there were two episodes requiring restrictions in 2006; civilly committed patients required five restrictive interventions in 2005 and required six in 2006; no assaults were recorded for forensic patients in 2005, and two were recorded in 2006; and there was one assault by a civilly committed patient in 2005 and one in 2006” (p. 264).

Table 2.1: Treatment mall group session attendance and participation ratings for 94 forensic and 100 civil inpatients at two time points (p. 264)

	2005 Group Ratings				2006 Group Ratings			
	Forensic Inpatients (N=6,951)[a]		Civil inpatients (N=3,489)		Forensic Inpatients (N=9,005)[b]		Civil inpatients (N=5,165)	
Engagement Rating	N	%	N	%	N	%	N	%
Refuses to join or leaves the group	556	8	824	24	32	1	84	2
Remains in the group but is disruptive	14	1	25	1	36	1	59	1
Remains in the group but does not participate	147	2	280	8	360	4	418	8
Engages in the group only when prompted	369	5	275	8	375	4	430	8
Needs frequent redirection to task or discussion	371	5	297	8	510	6	453	9
Engages with prompting, then remains on task	1,481	21	816	23	1,808	20	1,118	22
Engages without prompting, consistently on task	4,013	58	973	28	5,894	65	2,603	50

[a] $\chi 2=1,131.0$, df=6, $p<.001$
[b] $\chi 2= 505.0$, df=6, $p<.001$

Original Authors' Conclusions
"Further research is needed on the potential costs and benefits of integrating forensic and civil inpatients within a single treatment mall. The hospital's experience is promising in that the integrated program proved no less safe, and the quality of treatment and rehabilitation group participation, especially on the part of forensic patients, was encouraging" (p. 264).

Critical Appraisal:

Validity:
Relevant background literature was reviewed, and the need for the study was justified.
Study design was appropriate for the study question. However, the data collection process as well as the analysis of data was not clear enough to determine appropriate level of dependability. No power calculations or use of an audit trail were reported; however, the statistical test used in regards to the data collected was appropriate. Ethics procedures were not described. Although there was area for improvement, the site and sample population was described in enough detail that the information can be transferred to other state hospital settings across the country, and hopefully inspire them if they are already using the treatment mall to start gathering data for themselves and find new areas of benefit or additional support in the same areas of interest. Intervention was described in enough detail that it could be replicated in occupational therapy practice.

PEDro Score = 3/10

Potential Biases:
- No subject, therapist or assessor blinding.
- No random or concealed allocation of subjects to the two groups

- Potential for selection bias, as there was no clear description of how subjects were allocated to the treatment mall groups and selected to be rated by the facilitator.
- Co-Interventions – likely that some subjects were taking medications, which may influence outcomes (i.e, medication may improve their behavior). Furthermore, the study did not identify whether the individuals were receiving other therapy programs or services, therefore potential for co-intervention.
- Two different control group waiting times (three months versus six months)- allows potential for maturation effects and also co-intervention, which may have accounted for treatment effect.
- Baseline assessments were not recorded for each group, leaving a potential for the individuals in either group to have better behavior records before the study began.

Interpretation of Results:
The author described significant changes in the reported outcomes measures, specifically group attendance and quality of group participation. In addition, in the areas of disruptiveness and dangerousness, it was concluded that integrating forensic patients with civilly committed patients was no less safe than when previously separated. Significance was found among the treatment; however, the author does not articulate which outcome measures were statistically or clinically significant. No explanation was provided as to what the minimal clinically significant score was. An author of the study was contacted for further clarification regarding their outcome measures and data analysis; no response has been given at this time.

Summary/Conclusion:
Although this study had limitations regarding methodology and outcome measures, findings suggest that the implementation of the treatment mall in a hospital with chronic mentally ill patients resulted in improvements in engaging in group without prompting, remaining consistently on task, and significantly less likely to refuse to join or to leave a group specifically with the forensic population. These improvements were both sustained and increased during the next three-month period.

Table 3: Characteristics of included studies

	Study 1 (Bopp, J.H., Ribble, D.J., Cassidy, J.J. & Markoff, R.A., 1996).	**Study 2** (Ballard, F.A., 2008).	**Study 3** (Dvoskin, J. A., Radomski, S. J., Bennett, C., Olin, J. A., Hawkins, R. L., Dotson, L. A., et al., 2002).	**Study 4** (Holland, J., Vidoni-Clark, C., Prandoni, J. R., Fain, M. R., Richardson, E. J., & Montalbano, P., 2005).
Study Design	Expert Opinion (1)	Expert Opinion (1)	Expert Opinion (1)	Expert Opinion (1)
Intervention Investigated	Implementation of treatment mall	Implementation of treatment mall	Architectural design of a treatment mall in a forensic state psychiatric hospital	Implementation of treatment mall
Outcomes Measured	Not applicable	1) Patient satisfaction survey (given periodically) & 2) Staff interview on perceived benefits of treatment mall	Not Applicable	1) # and variety of active treatment programs, 2) Pre and Post mall Consumer Activity Preference Survey Results, 3) Group attendance monitoring, & 4) Utilization of clinical resources
Findings	Author's conclusions are as follows: "The treatment mall provides rehab services in a setting that is accessible to consumers who are most in need of services. It also achieves economies of scale that permit such services in the face of current staffing constraints. In addition, it makes the hospital environment more like the outside community, be separating the hospital's residential and treatment functions" (p. 701). Finally, the authors felt that the treatment mall program should be explored as they felt it had profound shifts in attitudes and consumer-staff relationships, and that these effects will greatly reduce the consumers' level of institutionalization.	1) Majority (82%) of patients reported that the treatment groups and activities were helpful in preparing them for discharge, in addition to the majority (92%) being very satisfied or satisfied with the help they received in groups and activities (p. 30) & 2) A few mentioned program benefits (refer to pgs 31-32 for extensive list): "opportunities for skills training and support relevant to to community living; patient/staff partnership to promote recovery; and opportunity to experience socialization with a variety of peers, resulting in increased confidence [in] the ability to form friendships and interpersonal reelationships."	Author's conclusions are as follows: "Thanks to the broad based team approach to facility design, the design team has managed to maximize the safety and security in a cost-efficient building while simultaneously giving patients a sense of autonomy, dignity, and safety within its walls. When construction is completed, this facility will allow staff to spend a higher percentage of their time teaching and reinforcing the skills that will allow patients to return safely to their communities" (p. 492-493).	1) Increase in number and variety of active treatment programs, 2) Post mall survey found an increase in persons attending the mall and completing the survey, with the average number of responses increasing by 60% and covering 20 categories of activities, 3) Group attendance monitoring became reliable and properly documented, & 4) Treatment mall helped make optimal use of staff and increased productivity, efficiency, without increasing staffing costs.

IMPLICATIONS FOR PRACTICE, EDUCATION and FUTURE RESEARCH

Implications: A future benefit to the treatment mall program is that is may help forensic clinicians perform more accurate, non-static risk assessments. A forensic patient's participation, performance, and improvement could be observed in integrated situations, which provide an environment that is closer to the community into which forensic patients will eventually be discharged.

The treatment mall is currently being used all over the country. In the state of Oregon, Oregon State Hospital (OSH) has currently implemented one treatment mall, with a second one being integrated in the coming year. While many clinicians are responding very favorably to implementation no evidence exists that conclusively suggests benefits to clients.

Limitations and need for future research: The above studies had several limitations regarding data collection and accounting for uncontrollable variables. For example, Webster et al (2009) noted, "forensic patients in an integrated mall environment may be "cued" to engage to a higher degree in rehabilitation than they would in segregated forensic wards" (p. 264). In addition, this was an exploratory study with a limited set of sample outcomes. This study provides a stepping-stone for a much larger study to be conducted; however, more research needs to be conducted to support these findings and better measure the effectiveness of this integrated program setting.

REFERENCES

Article critically appraised

1. Webster S.L., Sheitman B.B., Barboriak P.N., Harmon S.H., Paesler B.T., Gordon P.A., et al. (2009). Integrating forensically and civilly committed adult inpatients in a treatment mall program at a state hospital. *Psychiatric Services, 60*(2),262-265

Related articles not individually appraised:

Level 1 Evidence:

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